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EUROPEAN PATENT APPLICATION

⑰ Application number: 88302021.6

⑸ Int. Cl.4: E 04 H 17/14

⑱ Date of filing: 09.03.88

⑳ Priority: 10.03.87 GB 8705655

④③ Date of publication of application:
 14.09.88 Bulletin 88/37

⑧④ Designated Contracting States:
 AT BE CH DE ES FR GB GR IT LI LU NL SE

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⑤④ Fences.

⑤⑦ A fence comprising a series of prefabricated timber panels 12 erected between vertical metal posts 10 providing opposite vertical channels, each panel comprising upright boards 16 attached by single nails 9 to horizontal rails 13. The panels are secured in position by horizontal dowel pins 20 passed through holes in the steel posts into sockets at the ends of the horizontal rails 13. No other fixings are required.

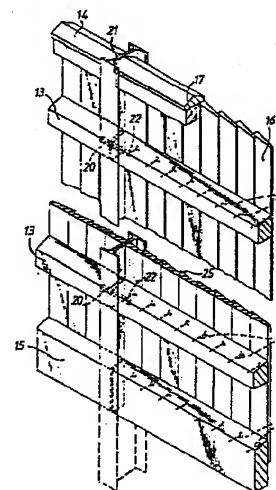


Fig. 3.

Description

"Fences"

This invention relates to fences constructed primarily or wholly of timber of the type comprising a plurality of spaced generally horizontal rails to which are attached generally vertical pales or boards. Fences of this type have been manufactured for decades and although they are simple to produce and erect they have certain problems and disadvantages and it is an object of the invention to provide an improved fence of this general type which will overcome some of the problems.

One of the problems is that the construction of such a fence on site is time-consuming and expensive, but if prefabricated panels are used the attachment of the panels to upright posts presents problems. Either elaborate mounting brackets are needed or the attachment of the panels to the uprights may be insecure. In timber fences there is always the problem of distortion of the timber resulting from exposure to the elements.

Now broadly stated from one aspect the invention consists in a fence comprising a plurality of spaced upright posts with interposed prefabricated panels each including two or more horizontal rails, and each panel secured to the posts by means of dowel pins or tubes inserted through apertures in the posts into sockets at the ends of the rails.

From another aspect the invention consists in a fence comprising a number of spaced uprights with intervening panels each panel comprising a number of vertically spaced generally horizontal rails to which upright boards or panels are attached, each panel being prefabricated before attachment to the upright posts and each attachment being by means of an elongated bar or tube inserted through an aperture in the respective upright post into a socket formed at the end of the respective horizontal rail.

Preferably each bar or tube extends on opposite sides of the respective upright post into sockets in rails of adjacent panels, and in a particular preferred construction each fence panel includes one or more horizontal rails, a capping rail and a gravel board, and bars or tubes are located in sockets formed in each of these horizontal members.

From another aspect the invention consists in a prefabricated fencing panel for a fence, comprising a number of spaced horizontal rails secured to upright pales or boards each pale being tapered in cross-section and overlapped with adjacent pales.

According to another aspect of the invention each of the upright posts is mounted in a socket designed to be set in position in the ground or in concrete, and the sockets are adjustable in dimension laterally to suit posts of different sizes.

The invention may be performed in various ways and one specific embodiment with some possible modifications will now be described by way of example with reference to the accompanying drawings, in which:-

Figure 1 is a general perspective view of a section of a fence according to the invention showing the back of one of the panels,

Figure 2 is a general perspective view of

another section of the fence illustrating the front of two of the panels on level ground and the back of one of the panels on rising ground,

Figure 3 is a perspective view on an enlarged scale showing one of the panels of the fence partly cut away to show the construction more clearly,

Figure 4 is a sectional end elevation through one of the panels at the position of an upright post, and

Figures 5 and 6 are a perspective and plan view of an adjustable post socket.

In this example the fence comprises a number of spaced upright posts 10 each of generally I-section and preferably formed of steel or other metal with a suitable weatherproofing coating. The lower end of each post is positioned in a preformed socket 11, which is either positioned in an appropriate hole in the ground or located by concrete. Between the upright posts are positioned individual prefabricated fence panels indicated generally at 12. Each of these panels has two, three or more horizontal rails 13, a capping rail 14 and a gravel board 15, to which are attached upright pales or boards 16. Each of these pales is of tapered or "feather edge" profile, (see Figure 3) and each pale is fixed by a single nail 9 to the horizontal members 13, 14, 15, with the wider edge of each pale overlapping the narrower edge of the adjacent pale. The capping rail 14 is combined with a counter rail 17 to provide both a nail rail and a weather protection for the upper edges of the pales. The gravel board 15 is intended to be positioned on or close to ground level, but the bottom edges of the vertical pales are stopped short of ground level, as illustrated at Figure 3. The upper surfaces of the horizontal rails 13 and the gravel board 15 are sloped downwards and away from the pales to assist in shedding rainwater.

Each panel comprising the horizontal members and upright pales is prefabricated to the dimensions of the upright posts 10 and their relative spacing, and the prefabricated panels are installed and secured to the uprights by means of removable stainless steel dowel pins 20, which are passed through appropriate holes drilled in the web 21 of each upright and into short sockets or drillings 22 formed in the end of each horizontal rail. The length of each dowel pin is appreciably greater than the length of each of these sockets 22 so that the pin engages in the sockets of the rails of fence panels on both sides of each upright post.

The assembly is extremely simple yet effective. Assuming that one upright post is in position, a prefabricated panel is "offered up" horizontally so that its rails and the end pale fit neatly into the respective channel of the upright post. Dowel pins are inserted through the respective drilling in the web of this post, into the formed sockets in the ends of the panel rails. The next post is then fitted over the opposite vertical edge of the panel and dropped vertically downwards into a post hole in the ground,

or a post socket surrounded by concrete. Further dowel pins are then inserted through the post web into the sockets at the ends of the panel rails leaving portions of the pins projecting horizontally. The next panel is then offered up horizontally so that the protruding ends of the dowel pins fit into its rail sockets. The same procedure is followed along the length of the fence and it will be seen that this requires no modification of the panels as they are installed and no manipulation of connecting brackets or the like.

As seen in Figure 2 the fence can readily be installed on rising ground for which purpose each panel is simply "losenged" to retain the pales in an upright attitude while the rails are inclined to follow the slope of the ground, as permitted by the single nail fastenings 9.

In a possible alternative construction, illustrated in the lower part of Figure 3, each of the vertical pales 16 is tapered in cross-section, as illustrated, and is also formed with a groove or rebate 25 at its broader edge, dimensioned to receive and fit the narrower tapered "feather edge" of the adjacent pale. This simple construction surprisingly provides a fence which is remarkably efficient as a highway noise barrier since it is more resistant to distortion resulting from damp or other weather conditions which could create gaps allowing noise to transmit through.

The use of post sockets, as shown at 11, is an advantage for several reasons. The sockets prevent earth or concrete coming into direct contact with the posts thus increasing the life of the post by reducing corrosion, rust or decay. Also the posts can readily be removed and replaced or, if damaged, new posts can be substituted.

To allow for posts of different dimensions the socket can be adjusted to suit. The construction illustrated in Figures 5 and 6 show this adaptability. Here the socket is formed from two extruded plastic sections 25,26 each having a longer wall 27 and a shorter wall 28. On the inner surface of the long wall 27 there are three pairs of ribs forming three shallow grooves 30,31,32 and each groove is designed to fit closely to the edge of the opposing short wall 28. This construction allows the longitudinal dimensions of the socket to be varied over the three possible distances and the transverse dimension can be varied simply by cutting down the edge of the short wall 28. Figure 6 illustrates a possible modification in which the extreme lip 35 of the short wall 28 has an enlarged head or bead 39 arranged to fit into one of the corresponding undercut grooves 40 in the corresponding long wall 27. It will be noted that the projecting tip or toe of the bead 39 is directed inwardly towards the centre of the socket since this arrangement assists in preventing accidental withdrawal.

The whole socket is intended to be surrounded with concrete or otherwise supported by earth or walling to hold the socket which in turn supports the fence post or upright. The adjustability of one single socket type allows for the use of various post sizes.

It will be seen that the fence construction described is extremely simple to erect and also

strong and inexpensive to produce. Each panel is a self-contained structural unit with the vertical pales nailed to the horizontals, but it does not require a complete surrounding frame and there are no vertical frame members at the vertical edges. The whole frame can be distorted to fit uneven ground, but the vertical edges remain vertical to fit the vertical posts and the connecting dowels 20 inclined to lie parallel with the rails.

Claims

1. A fence comprising a number of spaced uprights with intervening panels, each panel comprising a number of vertically spaced generally horizontal rails to which upright boards or pales are attached, each panel being prefabricated before attachment to the upright posts and each attachment being by means of an elongated rigid connector inserted through and located in an aperture in the respective upright posts, and extending on both sides of said post into sockets formed in at the ends of the respective horizontal rails of the two adjacent panels.

2. A fence according to Claim 1, in which the said pales are fixed to the respective horizontal rails by single nails, thus permitting bodily distortion or losenging of the panels to accommodate ground slope.

3. A fence according to Claim 1, in which each pale is tapered in cross-section and overlapped with an adjacent pale.

4. A fence according to Claim 1 in which each pale has a rebate at its broader edge to receive the narrower edge of an overlapped pale.

5. A fence according to Claim 1, in which each post is of I-section presenting open vertical channels falling in opposite directions along the fence.

6. A fence according to Claim 5, in which the respective vertical edge of each panel fits into the respective channel of an upright post, the said panel edge consisting of the end most upright pale secured to the ends of the respective horizontal members, without a vertical panel frame member.

7. A fence according to Claim 1, in which the sockets for the connectors are formed in the ends of the respective horizontal rails.

8. A fence according to Claim 1, erected in position on uneven ground, with the upright posts vertical, the panels distorted with the pales vertical and the rails inclined from the horizontal, and the connectors passing through the upright posts parallel with the horizontal rails.

9. A method of erecting a fence according to Claim 1, in which a first post is erected in the ground, a panel is introduced horizontally with a channel at one side of the post, connectors are inserted into sockets at the ends of the panel rails, a second post is positioned at the

opposite edge of the panel and connectors are inserted through the second post into sockets formed at the opposite ends of the panel rails.

10. A socket for an upright post of an external fence, the socket being adjustable laterally to suit posts of different dimensions.

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11. A socket according to Claim 10, which is formed in two components which can be shifted laterally relative to one another to alter the dimensions.

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12. A socket according to Claim 11, in which each component includes two rigid flanges lying approximately perpendicular to one another.

13. A socket according to Claim 12, in which at least one of the flanges has a groove or rib to locate the edge of a flange on the other component.

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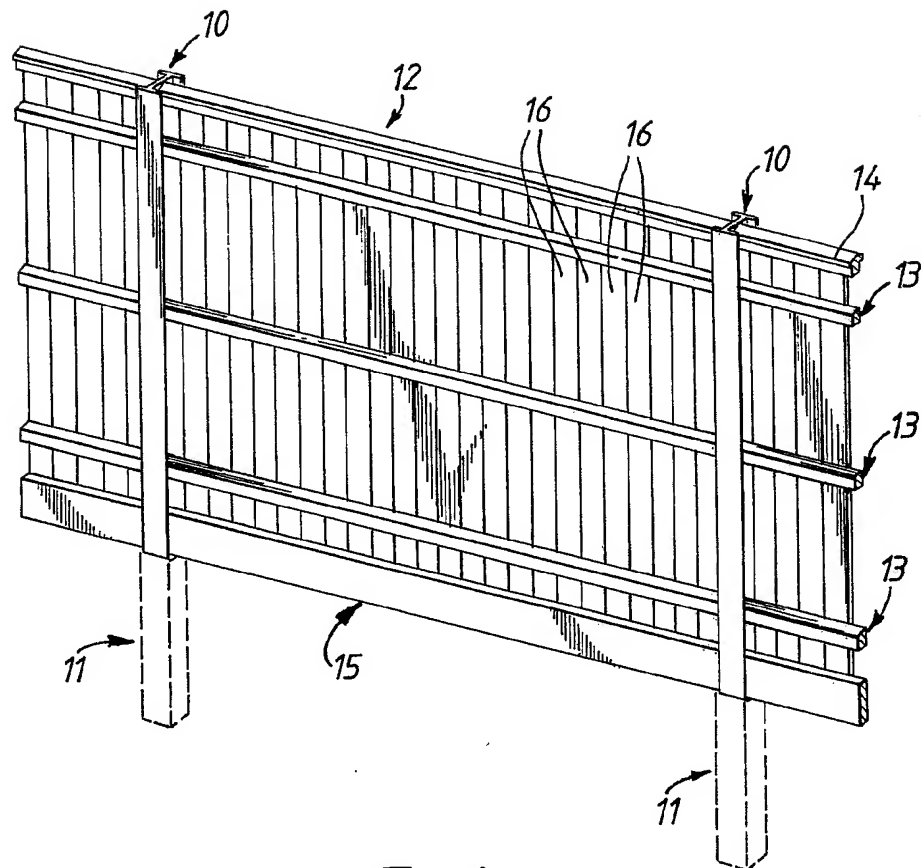


FIG. 1.



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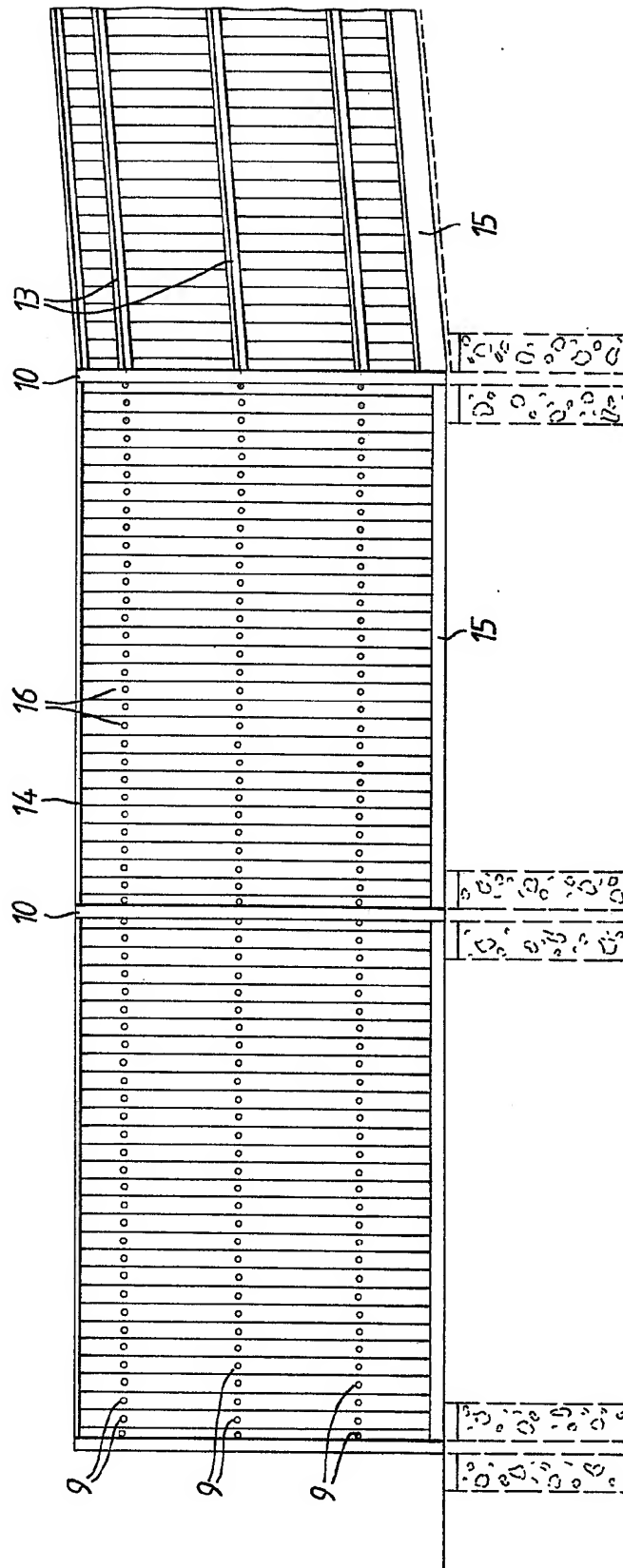


FIG.2.

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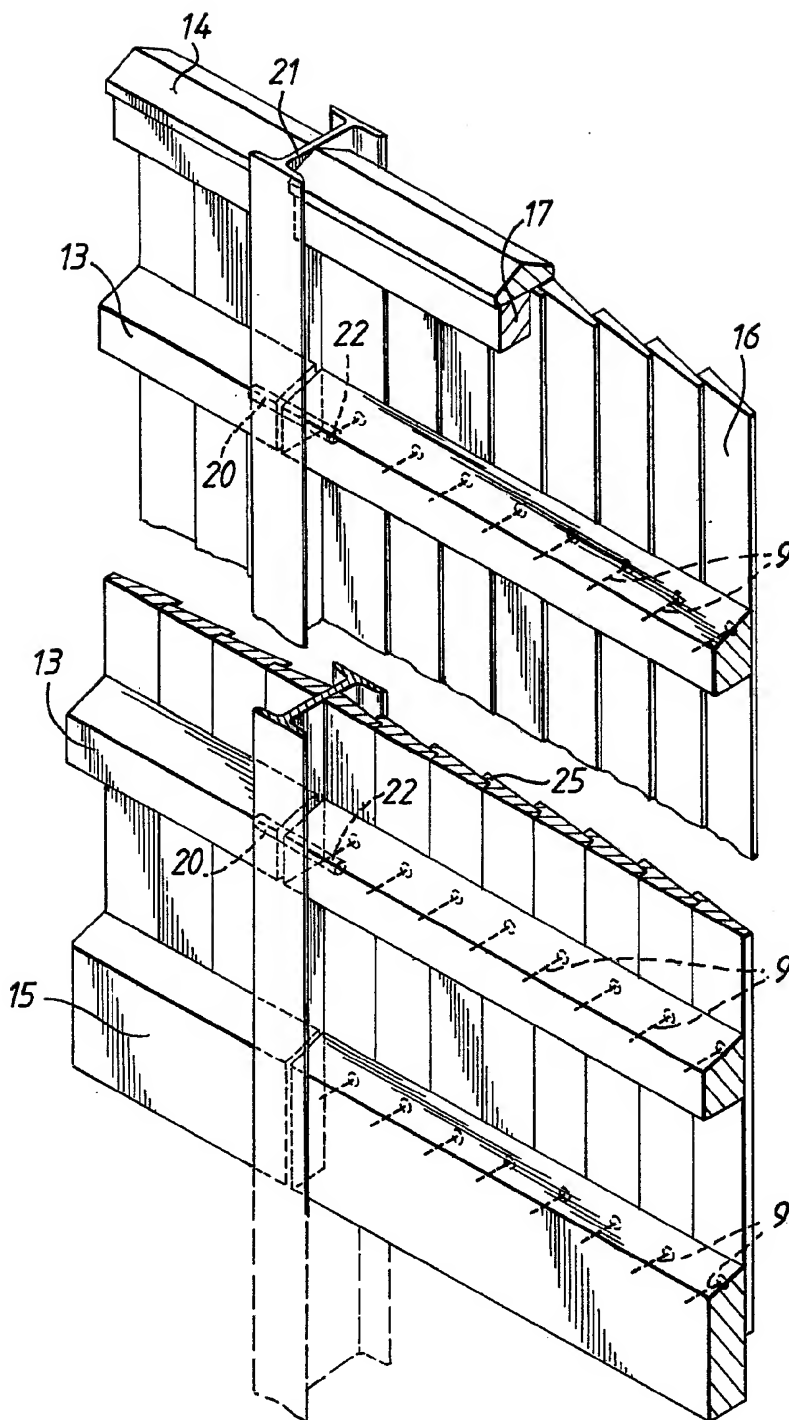


FIG. 3.

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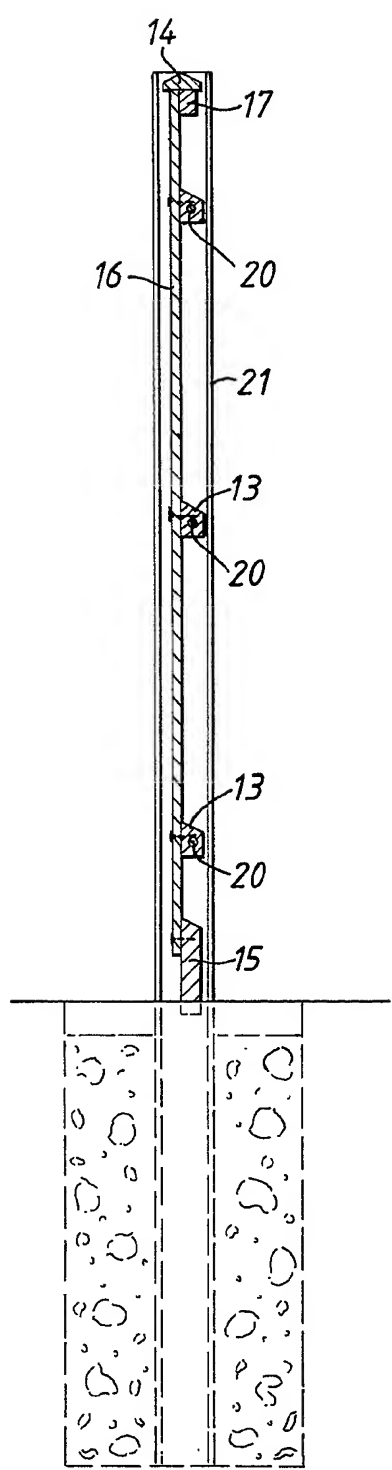


FIG. 4.

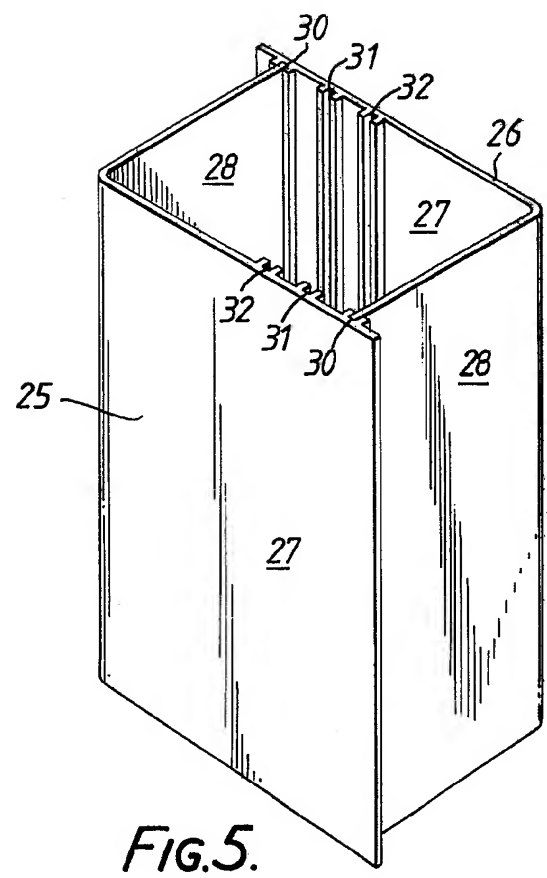


FIG. 5.

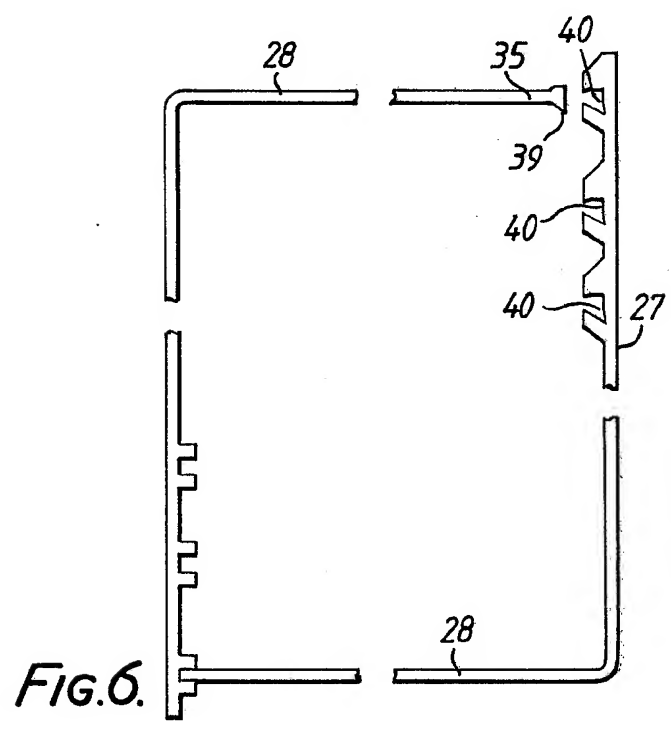


FIG. 6.